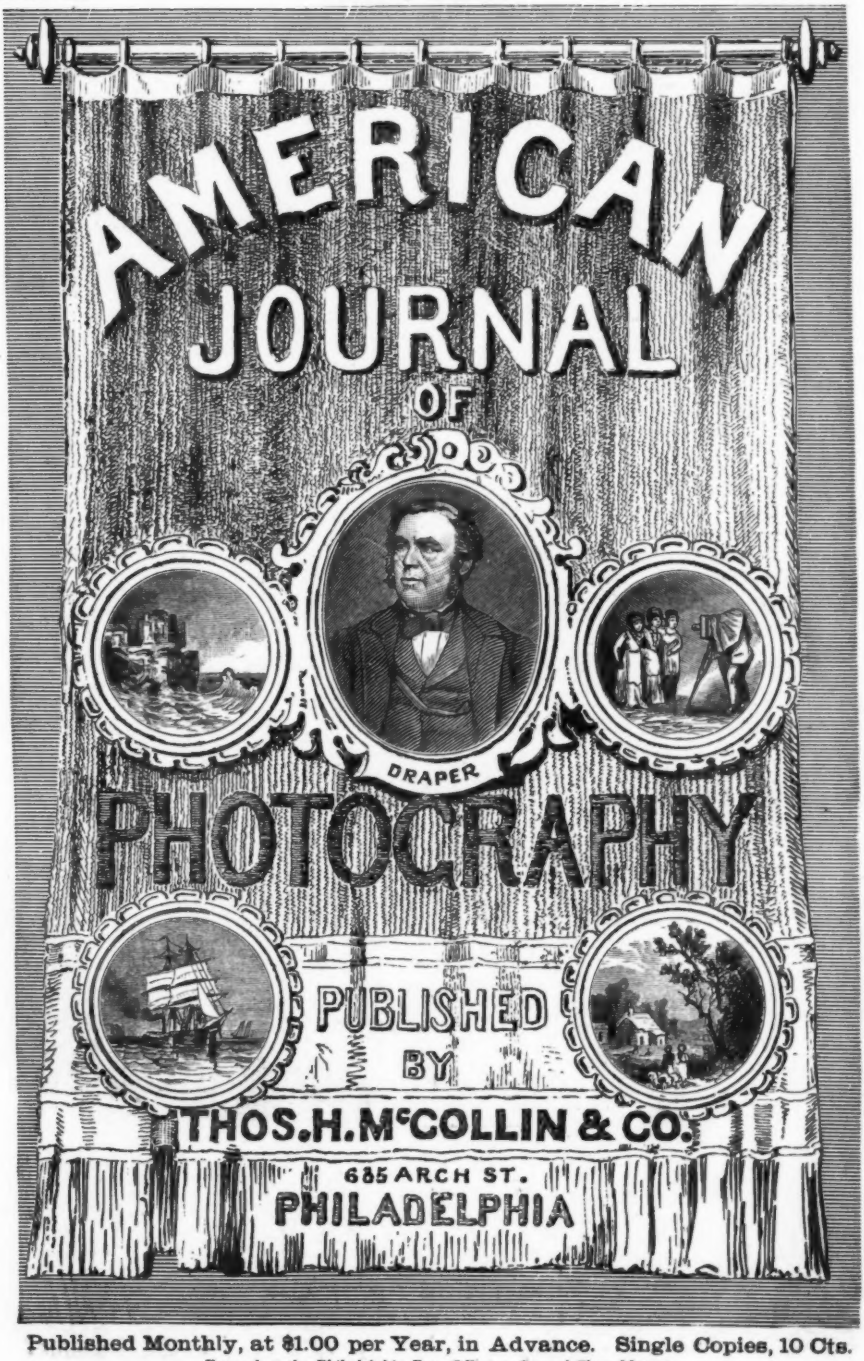
Vol. 8. MAY, 1887. No. 5.



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AMERICAN

JOURNAL OF PHOTOGRAPHY.

Published by THOS. H. McCOLLIN & CO.

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—PUBLISHED MONTHLY—

$1.00 per Annum, In Advance.

Photographing Interiors.

BY ELLERSLIE WALLACE.

To attempt to give advice upon a subject so extended in range as the photographing of interiors in any single article, is almost like treating the whole Art of Photography. Whether we bring to our work the cool judgment of the experienced workman, however, or the enthusiasm of the successful amateur, it will do us no harm to think over the peculiar difficulties apt to be met with in work of this character.

The two chief troubles in photographing interiors are bad illumination and unnatural reaches of distance; the latter being particularly offensive in the pictorial point of view, inasmuch as the perspective in the picture will be so distorted as to amount at times to an absolute caricature. Let the operator look around his own room or shop, and think of the disproportion between near and distant objects that would at once arise in any photograph taken of it. Why would this be so? Simply because the nearer objects are magnified too much by the lens, and the wider the included angle, the worse matters will be when the room is small. Indeed, it may be set down as an axiom, that the photographing of *small* interiors of all kinds is unsatisfactory in the *pictorial* sense, no matter how perfect the technical result may be; and this assumes even more importance when we remember that our work will be shown to, and criticized by, those whose eyes have not become accustomed to the peculiar and often violent perspective given by the camera. Indeed, as we remarked in our last article, a mathematically correct perspective may appear false to the eye, and we suppose every one will admit that objects should appear in pictures as they *look*, and not, of necessity, as they *are*. We might turn this idea to practical account in taking the interior of, let us say, a fair-sized room with a square table in its centre. As the camera would quite probably stand in a corner, the square table would show acute instead of right angles, and, in fact, remind one of one of the shapeless polygons found in works on geometry; and if any single lens were used with its curved distortion, we would then have a monstrosity that would puzzle Euclid himself. But suppose there was space enough to allow us to push the table off to some distance from the camera; things would then be greatly improved, and that part of the room immediately in the rear of the table would be better seen, while the table itself and objects upon it would make a nearer approach to pictorial truth.

For work in these comparatively small interiors, a good wide-angle lens will be required, and the owner of the room will probably feel flattered when the picture makes his apartment look somewhat larger than it really is.

As regards bad light, we will find that the subjects we will be most often called upon to make, present this difficulty in a great or even insuperable degree. Private rooms of all kinds, particularly libraries, studies, dining-rooms, halls, etc., will frequently be so dark as to render the work very tedious, or, worse yet, may have

the available light proceeding from one principal source, such as a window at the side or end, which will create the most violent contrasts of light and shade. An ugly feature here will force itself upon the attention, in the black shadows thrown by the legs of chairs and tables; or again, we may have just the opposite trouble with a light so admitted as to make every thing flat and tame by destroying all shadow; or the light may proceed from directly in front of the point where the camera must stand. As this, of course, can not be allowed, such sources of light must be covered, and we will then have to decide whether the remainder of the light will be sufficient, or whether we can eke it out by reflectors or mirrors, or be compelled to use artificial light.

Violent contrasts and crude shadows may be often improved by covering the windows with a single thickness of white tissue paper. It will be worth while to remember this, also, if the sun strikes on a wall or on the pillar in the nave of a church; the bright spot, of course, becoming solarized before the shadows have been sufficiently impressed. But a *sunbeam* entering a church through a small window, and striking across the nave or choir, will be a great beauty in the picture, and may easily be rendered, if the point where it strikes be out of the field, or care taken in other ways to prevent solarization.

Such interiors as those of large churches and cathedrals, public halls, large public and private rooms, single or *en suite*, factories, exhibition buildings, museums, art galleries, etc., will not be likely to offer difficulties that a little care and skill cannot overcome; while views between decks on shipboard, tableaux on the stage of the theatre, etc., will be perhaps difficult and unsatisfactory even to the expert. Subterranean photography will depend for its good effect upon the skilful handling of artificial light.

Thus the difficulties in photographing interiors will be interesting to any operator possessed of an eye artistically trained for perspective and chiaroscuro, and sufficient practical photographic knowledge to be able to tell just what lenses and stops will include an angle that will give pleasing results, together with the requisite depth of focus. As the manipulations do not, of course, differ from those in ordinary photography, we will merely remind our readers that all the lenses should be rectilinear, capable of covering tolerably well with a large stop, and have good "reach" or depth of focus; that the camera must be levelled, and that negative paper will often be useful, instead of glass, in case of obstinate solarization. As Mr. Bartlett's paper on "Photography by Gas-light" bears directly upon interior photography, we recommend a careful reading of it by all intending to take up this kind of work.

Photographing by Gas Light.

BY JOHN BARTLETT.

[Read before the Photographic Society of Philadelphia, May 4, 1887.]

There is nothing novel, nothing strange in the fact that certain salts of silver are sensitive to the moderate amount of actinic force contained in the flame of ordinary illuminating gas. Quite early in the reign of collodion some excellent work was accomplished by the use of such illumination in photographing interiors and dark places, but the difficulties attending the operation, the length of time required for exposure, and the consequent danger of the drying of the plate, did not contribute much to the popularity of the process. In fact, it was used only in extreme cases; frequently, merely to show the possibilities of the method.

With the advent of the extremely sensitive bromide of silver gelatine dry plate, one might suppose it would have advanced in favor, but the superiority in power, convenience of application, and cheapness of the electric light, considerably depressed the general interest for it as an artificial source of illumination.

Portraits have been successfully made by gas light, and even apparatus devised to utilize to the best advantage the force of the flame, but I think it may be safely said, that at present no gallery in the world employs it.

Our object is not to show the superiority of gas light over the other artificial illuminators, though we do think, had it been allowed, in the struggle for existence, to appropriate more of scientific and general interest, it would have differentiated much further; inasmuch as it possesses certain inherent good qualities which its more favored rivals cannot claim.

We merely wish to call attention to its great value in photographing interiors. Indeed, in this province of the art, it possesses advantages over day light in softness of the general effect.

In our experiments we did not use any apparatus whatever, not even reflectors, employing merely the light of the ordinary burners, protected by ground-glass globes.

The source of light was not intense, five bat-wing burners of a chandelier suspended from the centre of the room, 15x30 feet, the camera being placed at either extremity, and hence necessarily directed towards the light, but low enough to prevent the flames appearing on the ground-glass. A Ross rapid symmetric lens, six inch focus, was used, and exposures given from ten to twenty minutes. The results will be shown at the close of the meeting, by means of slides in the lantern. We imagine no one would be able to distinguish them from good interiors taken by daylight.

We have photographed the same room when illuminated by diffused sunlight, but have not obtained results as uniform in lighting. Day light gave more violent contrasts, the darker portions of the room lacking much in detail, while the highly illuminated parts were too intense. It is especially on account of the evenness and general distribution of the light, that we prefer gas to ordinary day light.

Its advantages over burning magnesium wire are even greater. Our experiments with this pure white illuminator gave very harsh contrasts in light and shade, although we sought to modulate its action by tissue screens, and by distributing the illumination as much as possible. We did not try the electric light.

The exposures of ten minutes with gas lacked somewhat in detail, showing undertime; but those of twenty minutes, as you will see, are pretty rich in detail even in the deep shadows. The plate we employed was, of course, the highest sensitometer number we could secure—some of Cramer's recent extremely sensitive brands. With the twenty minutes exposures. we developed with pyro and potash —of the ordinary stock solutions:

Pyro	2 drachms
Potash	1 drachm
Water	2 ounces

which sufficed to bring up all the detail and to give good density without any extra addition of accelerator, which, we think, demonstrates the truth that an evenly-lighted subject really requires less time with a moderate light than one violently illuminated with a strong light.

While making these gas light photographs, we were induced to try the action of the yellow gas light in rendering the colors with ortho-chromatic plates.

Carbutt B plates and Seed plates were first placed in a preliminary bath, consisting of

Ammonia	1½ drachms
Water (distilled)	7 drachms

and allowed to remain for a minute or two. They were then transferred to the ortho-chromatic bath, made according to the formula given in a package of Flandreau's Ortho-chromatic Solution, kindly sent by Scovill Manufacturing Company:

Water	5½ ounces
Erythrosine	1½ drachms
Ammonia	2 drachms

here they were rocked for a little over a minute, taken out, drained and dried in an ordinary drying closet.

They were exposed upon objects of blue, yellow, red, and green colors, without the interposition of the yellow screen, making use of the light of a coal oil lamp with a reflector placed near the objects, in addition to the light of the gas flames. The time of exposure with the B plates was fifteen minutes; with the Seed, two minutes. The ordinary developer of potash and pyro was used. I was troubled much with fog, especially with the Seed

plates, whose sensitiveness was probably affected by the ammonia employed, but the results obtained in the rendering of the yellow and orange were surprising. I have a couple of prints, one from the fogged Seed plate, two from the clear Carbutt plates, which show this remarkable action. The oranges in the basket were very orange in color, while the flowers were hyacinths of the palest blue, almost white—nevertheless, the deep so-called adactinic color of the fruit is rendered as a high light, as in nature, only a few degrees below the flowers.

In the other picture, the long-necked vase is of a bright chrome yellow color, which ordinarily is translated dark, the vase immediately behind it is ultramarine blue, the large urn light green, while the recumbent vase is vermillion. This last has scarcely taken better than with an ordinary plate.

The Erythrosine therefore would seem to depress the action of the blue, and to to render the yellow, orange, and green in their true relations; but not the reds.

Probably it would make an excellent plate for the yellowish greens of spring foliage.

I will confess I made some attempts at portraiture with ordinary plates by gas light, and,craving your indulgence, will let you see them, knowing you will be lenient in your judgment, when you find that the subject was obliged to endure martyrdom for three minutes.

I show them merely to call the attention to the possibilities of modeling with light and shade.

I found, by using a small hand reflector of cardboard and a shader, one might, if possessed of the skill, model in an artistic manner, the head, by directing the light and shade to any desired part. Of course means could be devised to shorten the time of exposure to less than a minute, and by keeping the reflector and shader in gentle motion, any required degree of light and shade could be secured, and much softness given to the image.

One recommendation has photography by gas light. It is independent of time and season and state of weather.

We could not help noticing how strange it was for us to be taking pictures in a warm, cosy room, while without the wind and the rain were striving for mastery.

Hints on Composition and Selection of Subject.

BY XANTHUS SMITH.

(Read before the Philadelphia Amateur Photographic Club, April 18, 1887.)

An important element of success in the pursuit of landscape photography, is the attainment of the power of selection. Those persons who are naturally gifted with that kind of taste which enables them at once to perceive those combinations and effects in nature which will make the most agreeable or effective picture are indeed fortunate; and although they may receive much gratification and instruction from looking at the works of eminent artists, and seeing under what effects they have treated the various scenes represented by them, such study is not so much a matter of necessity with them as with those who have been less favorably endowed. Sir Joshua Reynolds says, "Nothing is denied to well-directed labor; nothing is to be obtained without it." So that none of us need despair of attaining excellence, if we do but give our earnest attention to our pursuit. Hundreds of views are constantly being made that are of no account whatever, except in as much as they may be portraits of places possessing interesting associations to those who are taking them. As we see in show cases innumerable faces admirably done, and each one highly interesting to self and friends, but passed over with the utmost indifference by everybody else. When the object becomes the making of a picture, the producing of a work which, from its possessing certain intrinsic qualities giving it a wider interest, and making it as a work of art, more or less, it is necessary that we discriminate between the beautiful and the commonplace in nature. It will not, then, do to set our camera up in the first country road that we come to, and focus straight along it, being satisfied with its parallel sides, lined with stiff fencing, and rows of

straight-stemmed cedar trees. We must go further, and see if we cannot find a spot where nature will spread before us some of her unfettered charms. Trees remarkable either for the lightness and grace which characterizes some varieties, the fullness which marks others in the vigor of maturity, or for the picturesque ruggedness of decay. Some sheet of water, even though it be not river or lake, where we will get mirrored reflections, sparkling lights, and flat, quiet masses of shadow. If we can get a mountain peep in the distance, how fortunate. If not, perhaps we may find a rolling country, dotted with receding masses or groups of fine foliage. And our foreground. Let us, if possible, secure some variety in it. Bare earth, varied by patches of vegetation—rocks, stumps, and old logs—rather than flat, unbroken stretches of either grass or earth.

Having arrived at a point where we have found some elements of a good picture, let us so compose them, by moving from point to point, that we get our distance open and our main groups on either side. But let the group of one side be more important, if possible, than that of the other. There is nothing which makes a more picturesque contrast than a fine, full mass of foliage balancing some quaint denuded stem festooned with vines. Our foreground should have some important feature of interest, either suitable figures, cattle, or something of striking form, or light and dark, and not precisely in the centre, but generally a little either to one side or the other. It is seldom that such points can be put down in the extreme corners with good effect, as they carry the eye out too far from the centre of the work.

Although the plan of composition is occasionally tried by landscape painters of placing the principal group of trees in the centre of the work, it is seldom successful, the open spaces of distance, seen upon either side, equally arresting the attention, and so dividing it that the work is robbed of that unity of impression which should go towards making it agreeable.

There is at the present time a prevailing want of interest in, and sympathy with, the good art principles seen in the works of the eminent landscape painters who were living and working during the first half of this century, and it is chiefly the outcome of Ruskin's pre-Raphaelite movement. This school, and their adherents, strove to attain certain sentimental qualities which scarcely belonged to the province of art to convey; and the only art quality which they perfected, was that of imitation, which is considered the lowest quality of art; and as genuine pre-Raphaelism was dying out, the great period of scientific investigation set in, turning the minds of reading and thinking people in the direction of materialism and research, and the consequence is that now a picture is not valued as a piece of beautiful coloring, or composition or effect, as it was formerly, but it must tell some story, or be a wonderful piece of imitation of something, it matters not much what. Many pictures that are painted now have so little true art in them, and are so solely dependent npon the incident they represent for their aim, that a simple pen-sketch would fulfill their purpose just as well as the painting. I think this is somewhat to be regretted, and I hope that a taste may grow up again more in sympathy with true art. Turner and Stanfield, and the many good landscape painters who were working contemporarily with them, seldom, if ever, dealt with nature in her commonplaceness. They sought her out in the picturesque and the beautiful, and did not scruple to gather together what was near and characteristic to a neighborhood to enrich and beautify their compositions. They delighted in the effects of storm and cloud and sunshine which give grandeur and poetry to a scene, and I was going on to speak of their coloring, but this we have nothing to do with. Gentlemen, when we can fix the image as seen on the focussing screen, coloring included, as we do the light and dark alone, the painters occupation will indeed be gone.

As we must confine ourselves exclusively to composition and effect, let us consider a few of the first principles to be looked after in the successful getting up of a picture. Working, or rather presenting, as we do our subjects upon a flat surface, every arti-

fice should be used to overcome this perpendicularness of plane, and have the effect of leading the eye into the picture. Judicious composition and a proper amount of atmosphere are great aids in the retiring of distant objects and the advancing of nearer ones. A picture in which a number of conspicuous objects come one over another, or successively one under another, must appear flat, and especially if the objects just touch or cut upon one another; and it must to a great extent be by the lightening of shades that we get a distance to recede into the picture. In a landscape reproduction where our shadows are as black in objects miles off as they are in the immediate foreground, claiming an equal attention, we can get no retirement; and by cutting definitely and harshly against the sky in every part, a disagreeable hardness is given to the picture. As a means of obviating this hardness, in addition to working during a prevalence of atmosphere or haze, I would recommend, whenever possible, the introduction of skies, either by painting in, or by washing on the back of the negative with a little opaque. When the sky in the negative is not too dense, the latter plan will answer very well, and the addition of a sky to a landscape view is of immense value, not only on account of breaking up the flat, blank space, but it may be made the means of completing the composition of the work, and it also serves to carry off the distant features gradually, and repeats the dark tints of the foreground. There are, however, two conditions when skies are better left out: the one when they are got by laying cotton indiscriminately, and the other when printed in from negatives that are too strong and too bold in their masses, and either overpower the subject of the picture completely, or else divide the attention too much with it, and thereby rob it of its precedence.

Where amateurs have the time to devote, and are anxious to make agreeable pictures, much advantage would be gained by following the plan of landscape painters: namely, when they have found a good subject in nature, to study it under different effects of light and shadow, noting and comparing. I have occasionally made a sketch of a scene, thinking the effect admirable at the time I commenced it, and found after working an hour or so that it improved immensely; or, perhaps, seeing it a month later in the season, when the sun had got further around in her course and higher in the heavens, its charms were still further added to. This is especially apt to be the case in wood and dell scenes, where a stream of sunlight pouring in upon a mass of rocks, vines, or mossy bank or shingle, will bring out a foreground and immensely enhance the beauty of such a picture.

The interest and completeness of landscape photographs would generally be greatly added to if suitable groups of figures or cattle could be secured in them. The difficulties attendant upon the attainment of this I know are very great, and yet, like many other things which are difficult to attain, the accomplishment is the more credit to the successful aspirant. Extended landscape views, and views taken among grand mountain scenery, may very well be without people or domestic animals, as they would generally interfere with the quiet repose or lonely grandeur of the scene, and they would at any rate necessarialy be diminutive. But in that kind of landscape work which is best adapted to the powers of photography: namely, little domestic scenes and picturesque rural bits; figures are almost indispensable, not only from the additional interest which life gives to the scene, and its appropriateness, but on account of the opportunity afforded of getting spots of high light and deep shadow, generally brighter and deeper than any in the picture, and giving by contrast the proper relative values to all the other tones. Such touches are invaluable as a means of clearing up a picture, as artists call it—that is, giving brilliancy to it. The chances are so rare in the case of people, of finding them when wanted, or should they be present of securing their services, that I think it would be well worth the trying for a party setting off for landscape work to take their models with them. Let them get a good stout chunk of a girl and boy, well grown,

and a smaller child, and clothe them in light and dark, not the same from head to foot, and provide them with basket, or bundle and stick. In water scenes they will make admirable groups with a boat; and in posing them, do not get them too near, so that they swallow up the picture, or so far off that they vanish into utter insignificance. If your view is at all valuable as a picture, keep the figures subordinate to it, though. Pictures in which the figure groups play equal part, and divide the attention equally with surrounding scene, are not apt to be successful. Break up your large, blank space in the foreground, or if you have not such for your group, pose them so as to balance or complete the composition of the other principal features of the work. It is almost impossible to manage a single figure—they are only a spot if seated, or a post if standing. But with three, by keeping two near together and one a little off, you can arrange many agreeable groups. With cows or cattle generally you must take your chance. It is impossible to try to arrange them, as they become frightened and scatter. Wait patiently for an hour or two, and the chances are that while grazing or resting they will once or twice fall into good composition with the scene.

In conclusion, I will say that many will consider the pursuit of landscape photography not worth so much care and consideration; they may feel that in taxing themselves in this way they are robbing themselves of the mere sport that is to be derived from an outing, but I know there are others who would consider themselves much better compensated at the end of the season in having secured a dozen complete and beautiful pictures than if they had made some fifty indiscriminate views.

Distemper Backgrounds.

Ordinary distemper backgrounds are easier of preparation by the novice than are those in oil color, while they answer the purpose equally as well. They have, however, the disadvantage of not being so durable, though this, to some extent, is compensated for by the ease with which they can be recoated in case of injury.

Premising that the background is to be a new one, and that the work has to be commenced *ab initio*, the first thing to do is to strain some canvas, or sheeting, on to a frame or wall as described a fortnight ago for oil color, the same kind of fabric being employed. Next it is coated with size, as then directed, when it will be ready for the distemper.

The distemper is prepared as follows. Dry colors, as supplied by the oilmen, are mixed with warm water to about the consistence of thick cream. The colors selected must, of course, depend upon the tint desired. A grey is made by mixing common whiting with lampblack—an addition of Venetian red will give the grey a warmer and more agreeable tone. Burnt umber and whiting. with or without the addition of black, also makes a pleasing color for a background. But the particular color adopted is, in all cases, very much a matter of taste on the part of the operator, When the colors, whatever they may be, are intimately mixed and rendered free from lumps, a quantity of common size—procurable at the oilshops—is added, and the whole well stirred together. It is scarcely necessary to say that the size must be melted before it is added. The object of using hot water in mixing the colors is to prevent the size from gelatinizing on its addition.

With regard to the quantity of size and the amount of color to be used, no definite proportions can be given, as all will depend upon the pigment selected, some being much heavier, in proportion to their coloring power, than others; also upon the fact that different samples of size vary much in their strength. One or two experiments will determine this point. There is, however, great latitude in the matter. The effect of too little size is that the color will rub off when dry; and of too much, that the work will dry with a gloss. Some criterion as to the proper proportion is this: when the mixture is cold it should form a thin tremulous jelly. After the right proportion of size has been added and thoroughly incorporated, the whole must be

strained through coarse muslin or fine canvas. It is then allowed to become perfectly cold—prepared one day, it will be ready for use the next.

The great point in connection with the use of distemper color is to employ it cold and in a jellied condition, because if it be used warm, it is very difficult to obtain an even surface free from brush markings. Sometimes a small quantity of treacle is added to the mixture. The object of this is to prevent the coating, when dry, from becoming brittle, and eventually peeling off or cracking should the background require to be rolled up. It also somewhat retards the color from drying, which is often an advantage when it is applied during hot weather. If this addition is made, the old-fashioned "green treacle," or molasses, should be employed, and not what is known as "golden syrup," which is quite a different thing. When the distemper mixture is firmly set, it is well stirred up with a stick, so as in some measure to break up the jelly. It is then ready for use.

The color is applied to the canvas with a common whitewash brush. It is laid on somewhat thickly—the small lumps of jellied color being broken up with the brush as it is applied. It is not necessary that the distemper be laid on so evenly as it is in the case of oil color, for so long as no actual lumps remain it will suffice. A distemper background may look exceedingly unpromising when it is partially dry, but yet prove perfectly even when quite so. The chief thing with distemper—as with flatted oil—is to avoid one portion of the work becoming dry, or partially dry, before the next is covered. Unless this be accomplished the overlapping brush marks will invariably be apparent in the finished background.

One point in connection with the avoidance of brush markings is that the ground should be rendered impervious in the first instance, otherwise, when the color is applied, much of the moisture it contains will be immediately absorbed by the fabric itself, thus leaving the surface of the color in a semi-dry condition.

In the foregoing directions, we have assumed that a new background was being dealt with, but it will often happen that an old one has to be treated. In this case there is no material difference in the *modus operandi*. The old background must be sized the same as the new one in order to render it non-absorbent. If it has already received many coatings of distemper there will, necessarily, be a considerable accumulation of color on the fabric. This excessive thickness of pigment will always have a tendency to crack in very hot weather, arising from the contraction of the old gelatine present. This tendency may,, to a great extent, be counteracted by introducing some substance which will prevent the color from becoming abnormally dry. Treacle will fulfil this condition; therefore, to the size used for the sizing prior to recoating, a small quantity should be added. The mixture of size and treacle being absorbed by the accumulated pigment will confer upon the film a certain degree of flexibility as well as elasticity. Care must, of course, be taken that an excess of treacle is not employed, which would prevent the color from drying at all.—*British Journal of Photography.*

Variety of Tones in Bromide Prints.

Mr. H. Senier, at a recent meeting of the North Surrey Photographic Society (Eng.), gave a description of a series of experiments he had recently made with a view of obtaining a variety of tones in bromide prints and enlargements.

We extract from the report of the society communicated to the *British Journal of Photography*:

Mr. Senier first converts the silver of a bromide picture into chloride by bleaching in chlorine water, after which he redevelopes with ferrous oxalate or pyro; a variety of shades of red or brown can then be easily obtained by the use of bromide of potassum in the developer in greatly increased quantities, as much as 20 grains per ounce being used for red tones. A notable fact in connection with the process is that the redevelopment must be conducted in actinic light, otherwise, no redevelopment is possible. Bromide prints which have been spoiled by over-

exposure, can be made into good prints by this method, as the redevelopment can be stopped at any stage, a fact which is important in working large sheets of paper.

Another method for securing pleasing tones in bromide paper was suggested by Mr. Senier :

The print is immersed in chlorine water and partially bleached until a thin layer of chloride of silver is formed—this is easily recognized by a mealy appearance being seen upon the surface of the picture, the print is then washed, and exposed in a strong light until the chloride of silver is reduced to a warm tint.

A New Platinum Process.

Complaints that the tones of platinum prints were grayish, somewhat monotonous, and inferior in these respects to albumen, led to the following process by M. Leon Duval, in which the varnish being applied to the print, gives a gloss somewhat like the collodion enamel. This is claimed to be more artistic in appearance, giving a more agreeable tone to the image and deepening the greys, while adding transparency to the white.

This effect is obtained by the use of an aqueous solution of white gum lac, as follows : Dissolve 50 grammes (770 grains) of borax, in 1 litre (32 oz.) of boiling water, together with 12 grammes (185 grains) of carbonate of soda ; then add 200 grammes (3080 grains) of white gum lac to the solution. Although the gum lac (being a resin) is insoluble in water alone, it will dissolve in an alkaline water. The heat is raised to the boiling point until the gum is entirely dissolved, taking care to add boiling water to replace that which has been lost by evaporation. The solution is to be filtered through animal charcoal.

This liquid must be luke-warm when used, and the operating-room also slightly heated. The prints are floated on the bath, taking care that the whole surface is well moistened without air bubbles ; the prints are then lifted by one extremity, and hung up by one corner to dry, in a place free from dust.

The author is quite right in remarking that platinum prints are decidedly expensive—far more so than silver prints on albumenized paper. It would seem better simply to sensitize the paper with oxalate of iron to which some gum-like body is added. After exposure to light the print is to be immersed in a warm solution of oxalate of potash mixed with bichloride of platinum. The chemical reaction, which deposits the platinum in a state of fine division, takes place in the same manner as in the ordinary process, but only upon those portions necessary to form the image, and in proportion to the impression made by the rays of light.

We see an example of this in albumenized paper sensitized with nitrate of uranium. If, after exposure to light, it is immersed in a solution of bichloride of platinum, the image appears in all its gradation where the nitrate of uranium has been acted on by light.

Operating with the method above indicated, the expense becomes much lessened, inasmuch as the paper is first sensitized with oxalate of iron, which is very cheap. The print only takes up sufficient chloride of platium to form the image, and this is much less than is required in Willis' process. The chemical relations involved in the process are, moreover, very simple, The ferric oxalate, acted upon by light. loses oxygen and becomes ferrous oxalate. The ferrous oxalate, in presence of a warm solution of oxalate of potassa, instantly decomposes the bichloride of platinum, metallic platinum being deposited in a state of very fine division. In fact, if a solution of oxalate of potash be added to the ferrous oxalate contained in a test-glass, and heat be applied, the addition of a few drops of bichloride of platinum will deposit the metal in a state of very fine division.

At present, platinum paper is prepared by applying a mixture of ferric oxalate and bichloride of platinum. When dry, it is exposed to the light, then placed in a bath of oxalate of potash warmed ; the platinum salt is there reduced, and the metal remains in the fibres of the paper at the points acted on by the light.

Under these circumstances, we see that

a much larger proportion of platinum salt is employed; that which has not gone to the formation of the image, remaining in the bath or going to waste in the wash water.

The process of M. Duval seems to us worthy of adoption, because the first necessity is to obtain an image as superficial as possible, and which need not penetrate into the paper in order to become permanent. It is also less expensive, which will be a great recommendation to the professional man.

Translated from *L'Amateur Photographe* by Ellerslie Wallace.

Competion for Prizes

Offered by the Photographers' Association of America, at Chicago, Ill., August 9th to 12th, inclusive, 1887.

LIST OF OFFERS.

Class A.—For collection of Portrait Photography of any size. (Cabinet pictures not competing in Class C, may be included in exhibits competing in this class.)

1 Grand Prize, Diamond Badge, for the best exhibit.
4 Gold Medals for superiority.
4 Silver Medals for excellence.

Class B.—For collection of large Photographs; contact prints not less than 22 inches long; print not to be vignetted.

1 Gold Medal for superiority.
1 Silver Medal for excellence.

Class C.—For collection of 24 Cabinets.

10 Bronze Medals for merit.

Parties competing for this Class cannot compete in any other Class.

Class D.—Composition or Genre.

1 Gold Medal for superiority.
1 Silver Medal for excellence.

Class D.—Landscapes.

1 Gold Medal for superiority.
1 Silver Medal for excellence.

Class F.—Best Marine Views,

1 Silver Medal.

Class G.—Best Interiors.

1 Silver Medal.

Class H.—Best Instantaneous Views.

1 Silver Medal.

Class I.—Best Architectural Photography.

1 Silver Medal.

Class J.—Best Photo-Transparencies.

1 Silver Medal.

Class K.—Photography Applied to Science.

1 Silver Medal.

Rules to be Observed by Competitors.—All competing exhibits must be without frame or glass.

The space allowed to any exhibit shall not exceed twenty-five lineal feet, and each space allotted shall be properly filled with pictures, subject to the rules and under control of the local Secretary.

No sign of any description shall be allowed to be placed in the halls devoted to the display of photographs, except one card to every exhibit, said card not to exceed 7 x 12 inches in size, and to contain only name and address of the photographer whose work it represents.

Any picture may have its title of subject neatly inscribed thereon, but nothing of an advertising nature will be permitted.

Blanks may be had of

G. M. CARLISLE, *Treas.*,
Providence, R. I.

A One Hundred Dollar Prize.

The Stanley Dry Plate Company have decided to offer the above prize to be competed for at the coming Convention of the Photographers' Association of America, in Chicago, opening August 9, 1887. This sum will be given as a prize for the best collection of photographs, either landscapes or portraits, made on the Stanley plate, and displayed at the coming Convention. Pictures may be of any size. The award will be made on the second day of the Convention by three judges, members of the Photographers' Association, who will be appointed at the time of the meeting of the Convention.

The Stanley Dry Plate Company have deposited with E. & H. T. Anthony & Co., $100 in cash, subject to sight draft by the successful competitor, draft to be attached to the certificate of award, and signed by the judges.

The Theory of Development.

[A Communication to the Cardiff Amateur Photographic Society.]

By development of a plate, one understands the continuation and intensification of an action commenced by light. When a plate is exposed in a camera, the bromide and other salts of silver are so acted upon by light as to set up an incipient state of decomposition, that is, the light seems to weaken the affinity between the bromide and the silver. I have mentioned only bromide, but the same remarks apply also to the chloride and iodide, so that when the developer is poured on the plate, the separation of the two elements (silver and bromine) in the parts which have been exposed to light is affected long before the rest of the plate. It must not be forgotten that the whole of the plate is similarly affected by the developer, whether it has been exposed to light or not, and that it is only the difference in time between the blackening of the exposed and unexposed parts that makes development at all a possibility. This is a point that many amateurs would do well to bear in mind.

By a developer we mean any chemical or chemicals which have the power to reduce silver salts. These are known to chemists as reducing agents, and they are so called because all developers or reducing agents have one great property in common. They have all a great affinity for oxygen, and it is this property which enables them to reduce silver salts, and thus develope the picture. All the pyro developers in common use (for dry plates) may be considered on four legs, or to be composed of four principal parts, namely:—1. The reducing agent; 2. The corrective; 3. The alkali; 4. The preservative; all rendered active by being dissolved in the diluent water. I have a few words to say about each of these parts, and will try to answer intelligently the following questions:—1. What is the use of the reducing agent? 2. What is the use of the retarding, or checking, agent? 3. What is the use of the alkali? 4. What is the use of the preservative? 5. What is the use of the diluent water?

1. The reducing agent has the power to separate the silver from the bromine, chlorine, and iodine, or whatever other element or elements it may be combined with. This it does by combining with the oxygen of the water contained in the developer, thus liberating hydrogen, which combines with the bromine, iodine, etc., and leaves metallic silver in the form of a black powder. This black powder is the high-light of the picture. The substances generally used as developers are pyrogallic acid, hydrokinone, and oxalate of iron, although many other substances could be used. A very interesting experiment is to add a little of each substance to a solution of nitrate of silver in water, and observe the different effects.

2. The retarding, or checking, agent. For this purpose some bromide is used, generally the bromide of potash, ammonia, or soda. This acts by forming a loose compound with the silver salts, which is much less susceptible to the action of developing (or reducing) agents than the silver salts are alone. The bromide, therefore, protects the silver salts from the developer, and thus checks the progress of development.

3. The alkali is a necessary constituent of all pyro developers. The alkalies used are usually ammonia or the carbonates of potash and soda. I should think that the carbonate of ammonia, or the hydrates of potash or soda, would also serve for this purpose. If you try to develope a plate without adding ammonia, potash, or soda, you will find that it will be a failure. Suppose you put a solution of pyro, made acid with citric or nitric acid, on a plate, you will find that no action takes place, at least not for a long time. If you now add a little ammonia, potash, or soda, you will find that the development commences at once, and the more ammonia, potash, or soda you add, the quicker the development will take place. Chemists express these facts by stating that pyrogallic acid is active in an alkaline medium.

The ferrous-oxalate developer is, however, different. If you add an alkali to

that, you will make a mess of it. That is active in an acid medium. You know that the ferrous-oxalate developer is composed of proto-sulphate of iron (ferrous sulphate) and oxalate of potash. Ferrous sulphate alone might be used, but it is not nearly so energetic as the oxalate of iron, which is formed by double decomposition between the oxalate of potash and sulphate of iron. If you take two solutions of nitrate of silver, and add to one of them a solution of ferrous sulphate, and to the other the usual ferrous-oxalate developer, you will see that the sulphate of iron takes longer to blacken the silver (that is, to precipitate the silver) than the ferrous-oxalate developer.

4. The preservative. All the developers are very unstable compounds, because they are so susceptible to oxidation. When they are dissolved in water, they require something to protect them. In the case of pyrogallic acid, citric or nitric acid is used. I have said before that pyro is most active in alkaline solution. The acid is therefore added to counteract the oxidising tendency.

The ferrous-oxalate developer is usually protected by floating castor oil, or refined paraffine oil on the surface of it, and drawing off the solution with a tap or syphon. Hypophosphorus acid or hypophosphite of soda may be added (about one or two drachms to a pint), and will also keep the developer.

5. The water used. It is always the safest plan to use distilled water; but as a matter of fact I have never heard of failures through using good clean tap water.

Having endeavored to answer the questions I set myself, I think it would be a great step in advance if photographers would try and mix their developers and select their chemicals in a more intelligent manner—not to follow the books so closely, but to ascertain why this, that, and the other chemicals are used, and in what manner they act, and to regulate their mixing accordingly; in fact, the thing to be arrived at is to see scientifically with one eye, and artistically with the other.

JESSE WILLIAMS.

The Origin and Technology of Photographic Chemicals.

FRANK H. ROSENGARTEN.

First Paper.

How many of the army of photographic workers ever take time to think of the sources from whence the wonder-producing reagents they use, come?

Do they care to know, and will their production be of any interest? Those who work in them, do so, much like the butchers, the bakers, and the candle-stick makers in their industries, not thinking of the labors of the farmers and others who contribute their "raw" materials. Therefore, the writer, doubting the utility of these lines, ventures to add his to the many pages of literature of photographic work, trying to adapt the descriptions more to the tyro than to the professional photographer.

Of all the chemicals used in photography, none is more essential than Nitrate of Silver, for it is the only one, thus far, found to produce the film which gives, by the help of light, our pictures. Silver is occasionally found in the metallic state, sometimes crystallized, at other times combined with gold, antimony, arsenic, or mercury; but usually it occurs in the state of sulphide, either pure or mixed with other sulphides, as those of copper, lead, and antimony. It is sometimes found as chloride. The mineral containing silver, which is most disemminated, is argentiferous galena, which is sulphide of lead, containing a little sulphide of silver. Silver is extracted from its ores by two principal processes, *amalgamation* and *cupellation*.

At Freiburg, Saxony, the ore, which is principally the sulphide, is mixed with a tenth of chloride of sodium, and roasted in a reverberatory furnace. As fast as the sulphide is oxidised to sulphate, this reacts with the sodium chloride, forming silver chloride and sodium sulphate. The roasted mass is then reduced to very fine powder, mixed with half its weight of mercury, one-third its weight of water, and about a seventeenth of iron in flat pieces, and subjected for sixteen or eighteen hours to constant agitation in barrels

turned by machinery. The chloride combines with the iron and remains in solution as chloride of iron, while the reduced silver forms an amalgam with the mercury. The amalgam is subjected to pressure in leathern bags, through the pores of which the excess of mercury passes, a solid amalgam being left behind. This is then subjected to heat in a distillatory apparatus by means of which the mercury is separated from the silver, which is left as a porous mass.

When argentiferous galenas are worked for the silver they contain; they are first reduced, and the argentiferous lead obtained is fused on a large, oval, shallow vessel, called a *test*, and exposed to the blast of a bellows, whereby the lead is oxidised, half vitrified and driven off the test in scales, in the form of *litharge*. The operation being continued on successive portions of argetiferous lead, the whole of the lead is separated and the silver not being oxidisable, accumulates on the test as a brilliant fused mass, until its amount is sufficient to be removed. Mr. Pattinson, of New Castle, England, abridged this process very much, by permitting the melted alloy to cool slowly, and separating the crystals which first form, consisting mainly of lead, by means of a perforated ladle.

The residue is a very fusible alloy of lead and silver, in which the latter is in large proportion, and from which it can be easily separated by cupellation or other means. How simple this all seems, and yet what immense labor is involved! and the manufacturing chemist can well say, with the greenhorn Irishman, "It is the easiest job I ever saw; all I have to do is to carry the bricks on to the scaffold, and some other fellow does the work." In photographic work the purity of the chemicals used is absolutely essential, so, to make nitrate of silver involves careful chemical experience, to have the reagents pure too. Should the silver be contaminated with lead, zinc, copper, sulphur, or other impurities, they must be eliminated. Having pure silver, the battle is only half won, for the nitric acid must now be looked for. Nature kindly provides us with the materials from which to make it. Far away in the desert of Atacama, in Peru, nitrate of soda is found in beds of vast extent Of course, it is in a very crude state, and must be refined and crystallized and dried before it is exported. To accomplish this, great works have been erected, and many ship loads are sent to Europe and the United States. It contains as impurities common salt, sulphate, and carbonate of sodium, and chloride of calcium. Fortunately, for us, these impurities are reduced to a minimum by the skill of the chemists who conduct the manufacture, and the "Nitre Association of Tarapaca," in Peru, produce a nitrate with 0.5 per cent. of impurities.

From this nitrate of soda the nitric acid is made in immense quantities by mixing with sulphuric acid in great iron cylinders, properly constructed, and exposing to heat. The sulphuric acid combines with the soda, and the nitric acid distils off as a gas, and is collected in water. Now we know the origin of the silver and nitric acid, we can think of the preparation of the nitrate of silver. If we take 3 ozs. of refined silver, and two-and-a-half ounces of pure nitric acid, and five fluid ounces of distilled water, put them in a flask and apply a gentle heat, the silver is soon dissolved, and we get a beautiful, clear solution of nitrate of silver. Should there be any undissolved residue, decant the clear liquid into a porcelain evaporating-dish, evaporate, and set aside to crystallize. Beautiful, colorless, transparent, tabular, rhombic crystals, becoming gray or grayish black on exposure to light in presence of organic matter, odorles, having a bitter caustic, and strongly metallic, taste, and a neutral reaction, form in the solution. These are poured on to a clean funnel, to drain, and then carefully dried. The solution stains the skin of an indelible black color, and is itself discolored by the most minute portion of organic matter, for which it forms a delicate test. The affinity of this salt for animal matter is evinced by its forming definite compounds with albumen and fibrin.

Silver, in coin and silverware, is always mixed with small percentages of baser metals, and sometimes in Mexican coin,

with gold, for various causes, either to cheapen their cost, or to harden them to avoid abrasion.

The Photographic Society of Philadelphia.

A stated meeting of the Society was held Wednesday Evening, May 4th, 1886, with Vice-President Bullock in the chair.

The Secretary reported that Mess. Wilson, Hood & Co. had presented copies of the *British Journal Photographic Almanac* and the *Year Book for 1887*. and a resolution of thank was passed for the donation.

Attention was called to the collection of photographs hung on the walls of the room from which the Annual Presentation Pictures would be selected.

The Committee on Membership reported the election of the following active members: Mess. Thomas Lynch Montgomery and Samuel D. Hopkins.

Mr. Browne announced the death of Mr. James E. McClees an old Philadelphia photographer, who though not a member of the Society, he thought well deserved mention in the minutes at this time. Mr. McClees was one of the pioneers in the art in Philadelphia, and was well and most favorably known to the older members. Mr. Ellis and Mr. Bell also added tributes of respect to his memory, alluding to the freedom of access to his labaratory formerly enjoyed by amateurs, and the help he was always ready to give at a time when every new discovery was jealously guarded by most professional photographers.

The papers of the evening by Mr. Rosengarten on "Photographic Chemicals and their Technology," and by Mr. Bartlett on "Photography by Gas Light," were read and listened to with interest.

The Secretary showed a new model Prosch Duplex Shutter, the special features being a new form of release of great delicacy and certainty of action, and a revolving diaphram which entirely did away with loose stops making a combination of lens, stops and shutter with no loose parts liable to be lost or left behind. The rapidity of action of the shutter was also understood to have been increased.

Mr. Coates showed six lantern slides made from negatives of trotting horses, by Mr. F. O. Tucker, of Hartford, Conn. They were remarkable for their sharpness and full detail, some of the horses going at a 2.15 gait.

Mr. Trask showed a series of seventeen cabinet photographs of prominent Philadelphia clergymen, also three composite photographs made from the series. He stated that the question having been raised whether the first or the last impression on the composite negative produced the most striking effect in the resulting picture, he had made the first and second of the composites by exposing on the seventeen originals in reverse order, and the third indiscriminately, but no appreciable difference which could be attributed to this cause could be discovered in the result.

Mr. Vaux, alluding to statements which had been made in the *Philadelphia Photographer*, that the so-called photographs of lightning flashes are in reality only pictures of the illuminated edges of clouds, showed a series of pictures he had made of sparks from an electrical machine. From one to twenty sparks were included in each nagative, and their form was so precisely similar to their of lightning flashes that there could be no question that lightning pictures were what they claimed to be.

Mr. Walmsley showed one of Horsmans Eclipse Outfits, which were sold for the low price of $2.00, including all apparatus and chemicals necessary to produce photographs.

He also ahowed some blue prints made upon postal cards which were prepared and sold ready sensitized for the purpose.

Adjourned.

ROBERT S. REDFIELD,
Secretary.

Our Picture.

Our readers shall enjoy another series of Child-Life Studies, this time from our own city, from the studio of Mr. Joseph Husted.

The photographer's success here is due to his ability to discover in each of the little ones its peculiarity of character, for

they are as diverse in their individuality as grown-up people.

He shows himself a close observer of childish disposition, noting all their little shy ways and coyness, never trying to draw them out of themselves, and so making them feel constrained, and behave unnaturally, but catching them just at those moments when they are brim-full of fun, or when their little souls are mirrored upon their faces, potential with mischief.

In these qualities of the fresh gleam of nature, these photographs remind us of the charming pictures of children, which Gainsborough has made perennial with youthful delight.

The technical quality of the photographic works is also excellent. The shadows are nicely arranged, with fine gradations, and the high-lights soft and unobtrusive, giving much harmony to the whole picture.

We were not told the special brand of plates, but there is no necessity to say it is good. The prints are upon Morgan's albumen paper and bear testimony to its capability of rendering in perfection the good properties of the negative.

THE Annual Report of the President of the Society of Amateur Photographers of New York, has been received.

The Society has completed the third year of its existence, and is well prepared to advance to a higher sphere of usefulnes. An outline of the work of the year 1886 shows, that the members are actively engaged in promoting the interests of photopraphy by personal labors, and the preparation of essays and papers on chemical, physical, and artistic subjects connected with photography. An account is given of the various photographic inventions, and appliances introduced during the year.

The report terminates with an account of the successful exhibition of joint work of the three photographic societies at Ortgie's Gallery. The high quality of the work exhibited is dwelt upon, and inferences drawn from the data obtained of the preference for certain forms of manipulation in photographic process. In conclusion, Mr. Beach remarks:

"The present cordial relations existing between this and other home and foreign societies should be continued and fostered. Already the Camera Club of England is becoming of substantial benefit to our members traveling abroad. We in turn will welcome them here, affording every facility within our power.

It is surprising to note the number of new clubs springing up all over the country. The fact seems to show that the practice of amateur photography is becoming extremely popular as an amusement, requiring, by means of such associations, an organ to advance it towards a higher state of perfection.

That this society has prospered since its organization, no one can gainsay, and in becoming the exponent of all that is new, useful, instructive, attractive and good in the art of photography, it fulfils a mission which will be enduring.

Our prominent standing to-day before the photographic and the outside world is the result of hard, earnest, systematic work. Let us strive to maintain and preserve it, and press on to a still higher standard.

I would not fulfil my duty if I did not extend to my fellow Directors my sincere thanks for their faithfulness in conducting the affairs of the society.

As for myself, I have only to say that I have striven, in season and out of season, day and night, to push the standing of the society along, hoping to make it a permanent success. How far I have succeeded, I leave you to judge. I am conscious that I have committed many mistakes, which I sincerely ask you to overlook.

Thanking you all for your continued support of the society, and for your kind indulgence in the past, I close with the hope that our present prosperous institution may go on and prove still more beneficial to us and to its future friends."

THE Herf & Frerichs Chemical Co. has been incorporated at St. Louis, Mo., to manufacture a full line of pharmaceutical, photographic and technical chemicals. The directors are: Oscar Herf, Henry C. Haarstick, (Pres. of St. Louis, Miss. Val. Trans-

portation Co.) and Dr. F. Frerichs, late Superintendent of the Mallinkrodt Chemical Works.

The Herf & Frerichs' Works are located in the southern part of the city of St. Louis, and have a frontage of 700 feet on the Mississippi river, with steamboat landing and railroad switches.

The works will be in full operation by May 1st.

WILLIAM L. IMALY, of Camden, N. J., has obtained patent No. 361,947, for a photographic shutter so constructed that the focusing glass and sensitive plate are carried by the same frame, so that after focusing an object the plate may be immediately exposed.

It is capable of giving either instantaneous or time exposures, and its simplicity and ease in working will recommend it to everyone.

The opening and closing of the hinged shutter inside the camera is effected automatically by the movement of the plate-holder to the position occupied by the forcusing screen without the use of pneumatic bulb or release of any kind. It is easily adapted to any camera, and as the exposure is made simply by bringing the plate-holder in position, there is no time lost in carrying away the focusing screen and substituting the holder with the sensitive plate, and drawing the slide.

WE have received No. 1 and 2 of *Die Photographische Rundschau*, the organ of the Vienna (Austria) Amataur Photographic Club. It presents a handsome appearance, being printed on excellent paper, and with clear type, and illustrated with a beautiful instantaneous view of Hamburg Harbor, the work of C. Senna, of Vienna, editor of the magazine.

The contents are interesting and valuable, and the papers, containing a retrospect of the world's progress in photography, are of special importance.

THE translation from the French of the paper on a new method for platinum prints in the present issue of the JOURNAL, is of special interest.

The great objection to the platinum process, as now practiced, is the impossibility of eliminating the salt of iron from the fibre of the paper after it has once dried in it; and as any trace of iron will eventually cause the print to assume a dirty yellow color, platinum has not been hitherto very popular, notwithstanding the artistic qualities secured. The new method, however, by keeping the image superficial, not only adds to the beauty and brilliancy of the results, but lessens the liability of the penetration of the iron, besides being much cheaper than the process usually practiced.

THE *American Journal of Chemistry* gives the following plan for the reproduction of line drawings:

Select good sized paper, capable of resisting the action of the acid employed.

Dissolve 48 g. of common salt, 48 g. of bi-chromate of potassa, 1–10 g. vandanate of soda in 960 ccm. of water; also, in another vessel, 96 ccm. sulphuric acid in 480 ccm. of water; after cooling, add to the above. The paper is floated on this solution, and dried in the dark. The exposure is made in an ordinara printing frame, requiring about 7 minutes in a good light to secure an impression.

The paper is removed from the frame, and subjected to the mixed vapor of water and aniline for 2 hours, at a temperature of 30° C.

The paper will be covered with the green chrome salt, making a picture having black lines on a green ground.

To restore the original color, the paper is placed in a mixture of ammonia and water, 1–6, washed, dried and pressed.

The result is a clear black image on a pure white ground. The process is especially adapted for reproduction of maps, plans, and mechanical drawings.

THE Amateur Photographic Society of the Pacific has had its rooms elegantly fitted up, and supplied with all the modern apparatus for photography. One of the fundamental rules of the Society is that none of the members are permitted, under any circumstances, to sell any of the pictures or photographs taken by them. Sidney Smith is still Secretary.

ORTHOCROMATIC photography does not seem to attract the amateur to the degree one might expect, considering the ease with which plates may be made to render in their true relation of light and shade the so-called adactinic colors.

We lately received a package from Scovill Manufacturing Co. containing a solution of Erythrosine, called Flandreaus Ortho-Chromatic fluid. Following the instructions, we prepared a number of plates simply by bathing ordinary gelatine plates, and drying them in the dark. On exposing upon objects of yellow, blue, green, orange and red, we were surprised at the results we obtained. The yellows, greens, and oranges were faithfully rendered as highlights as in nature, instead of the dingy and dark shades obtained without the use of the Erthrosine. The action of the blue, was depressed. The red, however, did not come much better than with ordinary plates.

We employed the yellow screen, placed back of the lens, when the exposures were made in day light, but at night we used the yellow light of coal oil and gas, without the interposed screen. The results were equally good; the exposures at night being longer.

Development was effected in the usual manner. Care being taken to keep the plate from too much yellow or red light.

AT the April meeting of the Photographic Society of Philadelphia, a communication was made of a method for intensifying gelatine negatives, which is as follows:

The thin negative, *after fixing*, is first placed in an acid solution.

Water, ...	20 ounces.
Chrome Alum, ...	1 ounce.
Nitric Acid, ...	10 drops.

Or,

Citric Acid, ...	1 ounce.
Water, ...	20 ounces.

It is then removed to a bath consisting of 1 drachm each of the following solutions to 1 ounce water.

A.—Gallic Acid, ...	120 grains.
Alcohol, ...	1 ounce.
B.—Silver Nitrate, . . .	30 grains.
Water, ...	1 ounce.

The *British Journal of Photography* (April 29), in a paper on intensification, refers to the above communication as an unfortunate muddle, lacking in agreement between results promised and obtained—not to be recommended on the score of economy.

On repeating the experiment exactly according to the formulæ of the communication, we find that 120 grs. of gallic acid is in excess for 1 ounce of alcohol, about 100 being taken up in 95 per cent. alcohol; but there is no precipitate formed on adding the nitrate of silver, and no trace of muddiness.

The mixed solution remained practically clear during the intensifying of three 5x7 negatives, and showed a slight turbidity only after standing thirty minutes.

The negatives gained in intensity, and were not stained in the solution.

The paper remarks that "perhaps the most serious objection to the preliminary bath consists in its other constituent—the chrome alum. The immersion of the plate in a solution of chrome alum of the strength of one ounce to the pint, or upwards of twenty grains to the ounce, exercises such a hardening effect upon the film that all chemical or intensifying action is practically arrested, and the only effect of even a prolonged immersion is to *stain* the image, and so give it a fictitious appearance of greater density. *The fixing operation, too, is so seriously prolonged* from the same cause that despite the combined hardening effects of the chrome alum and the gallic acid, frilling can scarcely be prevented."

From which it is evident that the intensification was undertaken previous to fixing. Hence the contrariety of results. The communication was not explicit on the point, but took for granted that the operation was to be performed on fixed plates.

On the score of economy, the plan may not be as practical as other methods of intensifying, but it does undoubtedly build up beautifully the image, as claimed by the communication, without producing the slightest stain upon the negative.

May Bargain List.

Accessories:

1—Papier Mache, Fire Place and Cabinet combined, fair condition, reduced to 4 00
1—Papier Mache Pedestal and Base, good order 2 00
1—Universal Position Chair, Crimson Terry; all Attachments except Baby Chair; good as new 30 00
—Spencer Head-rest 11 00
1—Drapery 4 00
1—Drapery 6 00
1—Papier Mache Log, 2 feet long..... 2 00
1—8x10 Osborne Interior, new, light left of sitter..... 16 00
1—Pharaoh Position Chair..... 20 00
1—Seavey Rock, new..... 4 50
1—Seavey baby shell, with background, complete 4 00
1—5x8 Eastman's Roll Holder, in good condition 15 00
1—8x10 Eastman's Roll Holder, good as new 20 00
1—8x10 Hough's ground, light left of sitter 12 00
1—8x8 Seavey Ground, new 15 00
1—8x8 Seavey Ground, new..... 15 00
1—8x10 Osborne's interior background, new..... 20 50
1—8x10 Osborne's interior background, new..... 20 00
1—8x8 interior background..... 15 00
1—7x9 exterior ground..... 7 50
1—8x10 Hough exterior ground..... 16 00
1—8x8 Bryant exterior ground..... 7 00
1—4x8 Osborne's tide slip..... 7 50
1—Iron centre camera stand..... 2 50
5x8 orange glass developing trays..... 40
Wood drop shutters..... 1 50
Negative boxes, odd sizes, each 20

Camera Boxes.

1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod, and 1 Canvas Carrying Case, very little used. Price, new, $40.50, will sell for 30 00
1—5x8 A O Co. first quality box, 4 double holders, carrying case tripod with 1 5x6 Dallmyer R R Lens, used very little, good as new 68 00
1—4x5 Equipment, No. 4, Anthony's View Camera and 6 Holders.... 12 00
1—6½x8½ camera, with ratchet bed, ground glass and wet holder..... 6 00
1—½ size Ferrotype box, with three tubes..... 13 00
1—5x8 Stereoscopic camera, with matched pair Waterbury lenses, two holders and case..... 10 00
1—Card size portrait box, with Darlot tube and double holders 2 00

Lenses.

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